Spring Cavefish

Chologaster agassizi

Guidelines for Landowners Using Conservation Practices

Missouri Department of Conservation

Common name ▪ Spring Cavefish
Scientific name ▪ *Chologaster agassizi*
State status ▪ Endangered
Federal status ▪ None

Ecology

Spring Cavefish have a localized distribution from Southern Illinois southward to central Tennessee and into southeast Missouri. They inhabit caves, springs, spring runs, and spring seeps throughout their range, but they are currently found in only one site in Missouri. Spring Cavefish usually stay underground after dawn but emerge into surface waters at dusk. They use their underdeveloped eyes to distinguish between light and darkness. These fish are specialists in their diet, feeding mainly on three species of amphipods (genus *Gammarus*). Spawning likely occurs underground between January and April. Adult spring cavefish typically reach a length of 1.8 to 2.6 inches.

Reasons for Decline

Cave streams and springs are affected by the activities on the surface of the ground. Any activity that reduces water quality or quantity affects cavefish. Although there is no evidence to suggest that spring cavefish were ever more common than they currently are in Missouri, they are vulnerable to pollution from crop fields, pastures, septic tanks, sewage lagoons, chemical spills, urban runoff, toxic metal from mines, and livestock and poultry waste. In addition, activities that alter the water table, such as wells and quarries, affect cavefish habitat.

Recommendations

Species like the spring cavefish are indicators of clean, healthy aquatic systems. Their presence suggests that the underground water supply is likely contaminant free. Spring heads, pools, and small spring branches are important habitats for the Spring Cavefish and the floodplain surrounding these features should be reforested to the greatest extent possible. Following these recommendations will avoid or minimize impacts to cave systems and the spring cavefish.

Photo Credit: http://www.clt.astate.edu/aromero/new_page_35.htm

Contain all construction debris to prevent its accidental introduction into caves, sinkholes, or springs as a result of clean-up activities, run-off, flooding, wind, or other natural forces. Dispose of chemicals, toxic wastes, garbage, and wash water from trucks in areas designated for such wastes. These sites should be away from caves and sinkholes. Protect natural hydrology to avoid lowering of the water table. If temporary roadways must be built, ensure that roadways are of low gradient with sufficient roadbed and storm water runoff drains and outlets. Minimize sedimentation and chemical or nutrient-laden runoff into streams, sinkholes, caves, and abandoned wells by implementing and monitoring erosion and sediment controls for the duration of the project.

Re-establish and maintain forested riparian corridors at least 100-feet wide along streams and springs and around cave and sinkhole entrances to reduce erosion and capture nutrient rich runoff. Minimize erosion by revegetating disturbed areas as soon as possible.

Refer to Management Recommendations for Construction Projects Affecting Missouri Karst Habitat and Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

Consider the balance between adverse and beneficial practices when determining the overall effect of a conservation practice.

Beneficial Practices

- Livestock exclusion from sinkholes, springs, and karst areas.
- Limit livestock access to streams.
- Filter strips and riparian corridors around sinkholes and springs.
- Nutrient and pest management on adjacent agricultural fields that results in reduced opportunities for runoff.
- Protection and restoration of riparian corridors along streams.
- Practices that control erosion and prevent the delivery of sediment to the aquatic system will prove beneficial to this species.

Adverse Practices

- Sealing or altering cave entrances or sinkholes as cavefish depend on the outside environment for food and nutrients.
- Re-routing runoff from one sinkhole entrance to another.
- Entering caves resulting in a disturbance to bats that provide nutrients for cave fauna.
- Discharging spillways from lakes or ponds into sinkholes.
- Disposal of chemicals, toxic waste, garbage, and wash water from trucks in areas not designated for such waste. Designated sites should be away from caves and sinkholes.
- Overlooking erosion and ignoring sediment control.
- Installing a drain into a karst feature without a filter strip surrounding the point of entry.
- Building roadways, paths etc., to cave entrances which could result in increased human activity at the cave entrance and potential impacts to cave ecosystems.
- Uncontrolled livestock access to forested riparian corridors and streams.
- Unmanaged application of pesticides, animal waste or fertilizers that destroy or degrade habitats that support populations of this species.

Information Contacts

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http://www.mdc.mo.gov/nathis/endangered/

Legal

The Missouri Department of Conservation prepared these guidelines for conservation practices with assistance from other state agencies, contractors, and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat.

Compliance with these management guidelines is not required by the Missouri wildlife and forestry law or by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

"State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, and specific requirements for impacts to such species are expressed in the Missouri Wildlife Code, rule 3 CSR 10-4.111.

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